Promoting health through public programmes in university medical museums

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Resumo

Por todo o mundo, os museus de patologia encontram-se em perigo. Este artigo discute as razões e a dimensão da ameaça destes preciosos recursos pedagógicos, que se vêem lentamente transformados em 'colecções adormecidas'. Tratar-se-á já de material meramente histórico e patrimonial? Que factores poderão contribuir para a sua sobrevivência? De que modo se transformaram o papel e a importância destas colecções para o ensino da medicina? Por outro lado, serão estas colecções adequadas a programas educacionais de saúde pública destinados a um público geral? E de que forma? Nos museus de medicina, uma mudança de orientação a par do aumento da acessibilidade as colecções a um público cada vez mais abrangente poderão convencer os mais hesitantes de que continuam a ser tesouros educativos.

Abstract

Pathology museums worldwide are in danger. This paper explores the extent and the reasons for this threat to these valuable teaching resources – day by day becoming dormant collections. Should they now be classified as heritage material? What factors might contribute to their survival? How has their role changed? How effective and appropriate might they be as a resource in delivering public health programmes and how can this be achieved? How can meaning and interpretation of this type of material be conveyed to those undertaking community outreach? Shifting the focus of medical museums and creating accessibility to a broad audience may allow these museums to be promoted more widely as the educational treasures they are.

Introduction

Pathology museums in the past remained behind closed doors to all other than medical students and staff. This is still generally the case for most university medical museums. The Museum of Human Disease – a pathology collection in the Medical Faculty at the University of New South Wales (UNSW) in Sydney was no different until 1996. In general, in Australia and in most places worldwide where a Medical teaching faculty exists, so do Anatomy and Pathology museums with preserved dissected human tissue to assist with the teaching. Anatomy museums tend to have larger dissected sections for the purpose of enabling students to see internal organs and structures as they might appear in the reasonably normal state. This can be somewhat confronting for the uninitiated. However, in pathology museums, the exhibits usually tend to show much smaller sections of organs and tissues, which enable students to see the progress of disease displayed in its original state. This appears to be less confronting to non-medical visitors, and my belief is that pathology museums lend themselves for use in educating community audiences in a way that anatomy museums can also do, but only with greater care in delivery.

The Museum of Human Disease collection houses specimens, which display diseased tissue preserved

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in formalin. The layout of the main museum area is sectioned in small alcoves classified according to organ type or disease type. It, like many pathology museums in the mid 1990s, was under threat. This has come about for several reasons: a) change in medical teaching mode resulting in less university campus teaching and more emphasis on students learning in more clinical settings; b) less emphasis on pathology in undergraduate medical education overall; c) shortage of space on campus for other usage (e.g. research activities, increasing enrolments in other courses); and d) expense of maintenance and lack of expertise in the necessary techniques and irreplaceability of specimens (WAKEFIELD in press).

Lack of acquisition in recent times relates to a number of factors, including modern treatment and surgical techniques, elimination of some diseases, decrease in autopsies and increasing difficulty in accessing permission to obtain suitable specimens. The latter in particular is reflected in a changing public perception of the retention of human tissue. Do we then just wait and allow these rare but priceless and valuable teaching specimens to become only an under-utilised resource or dormant collection?

In this paper some of the contemporary issues faced by pathology museums in universities are discussed. In particular, the case of the Museum of Human Disease is presented, and its programmes and main strategies outlined.

Main issues related to the acquisition and display of pathology specimens

How do we assist survival of such museums? Part of the answer is that we need to make greater use of these collections. Apart from their continued use in a different mode for teaching revised medical curricula, we need to assess their suitability for expanded roles. A change of direction is required. To support undergraduate and graduate medical teaching, accurate correlation between the appearance of specimens and actual clinical cases is invaluable. Pathology collections provide a natural history of disease in its three dimensional form, ranging from infectious to non-infectious and common to rare.

Some diseases may exist in only very small pockets or occasional outbreaks in environments where specimen collection might be difficult or impossible due to isolated location, low occurrence or cultural disapproval. Some cultures are particularly adverse to and affronted by autopsies – a major source, apart from surgery, of these types of specimens. Although in some cultures, such as in Australia, many people 'leave their bodies to science' for dissection purposes and this is the source of material for teaching in Anatomy, this is generally not a source of pathology specimens. Firstly, legislation covering the collection of pathology specimens is enshrined in different parliamentary acts from those governing anatomy collection in NSW and in Australia generally. There are also disease conditions in Australia (e.g. coronary heart disease and cancers) that are a common cause of death and most pathology collections already have adequate examples of the expression of these in body tissues. However, unless consent is given and written permission can be obtained, the chances of new and unusual diseased specimens being added to collections at autopsy nowadays is almost non-existent. Students and even clinicians would seldom have the opportunity to sight expressions of the rare conditions.

Collection of pathology specimens during surgery for testing is common but generally consent for addition to museum collections is rare. Modern day surgery and pathology testing techniques also raise problems. In fact, due to an increasingly litigious society, biopsy samples are sectioned extensively and mostly rendered unsuitable for display purposes.

Treatments in the form of antibiotics, implants, anti-virals, anti-fungals, chemotherapy and radiotherapy, to name a few, also change the nature or progression of a disease so that its effects on body organs or tissues does not reach full natural expression. Some treatments result in a degree of radioactivity in the specimen which would require special handling for display purposes.

The disappearance of some diseases such as smallpox or the rarity of some diseases such as diphtheria in many developed nations as a result of extensive vaccination campaigns means that specimens showing the effects of such diseases are virtually irreplaceable. However, the availability of such specimens often becomes important when the information locked in their genetic make-up at the molecular level is required for analysis and contribution to further knowledge about related conditions. Recently, the threat of germ warfare has resurrected the need for information, vaccines and further research towards the treatment and control of possible outbreaks of serious diseases once thought to belong in the past.

Increasingly laborious but necessary safeguards for the procurement of permission to retain pathology specimens for both research and preservation, has greatly reduced the retention rates. Legislation has become more stringent to protect the sensitivities of current society and attitudes with regard to this issue. Worldwide, it is a source concern for some societies and cultural groups more than others.

Recently, ethical issues have received critical attention, particularly in relation to specimens collected for research purposes. Some material has remained in storage for a long period, awaiting grants and staff acquisition which in some cases have not come forward, leaving the specimens in a type of limbo. This has sometimes been interpreted as evidence of a lack of respect. In other cases, the existence of specimens retained without the knowledge of close family members has shocked those concerned when they came to light. The need for proper guidelines and legislation is imperative, but will inevitably lead to an increasing difficulty in procurement of pathology specimens.

The Museum of Human Disease: Strategies

Due to threats of decreased funding, declining acquisition of new specimens and reduction in staff and space allocated for the upkeep of the Museum of Human Disease, a number of strategies have been employed to assist the survival of the Museum. Further use of these endangered collections involves a change of mind-set about exposing the collection to new audiences for which a pathology museum would have relevance. To assist this metamorphosis at the Museum of Human Disease, a Museum Manager was appointed to develop programmes and enlist additional audiences. These have included high schools, TAFE (Technical and Further Education) colleges, allied health groups, insurance assessors and other community groups such as scouting, probus (professional and business retirees) and senior groups.

Diverse programmes were developed for participation, by appointment, in two-hour length time brackets. Biology students come to study a topic covering human disease in their final year of high

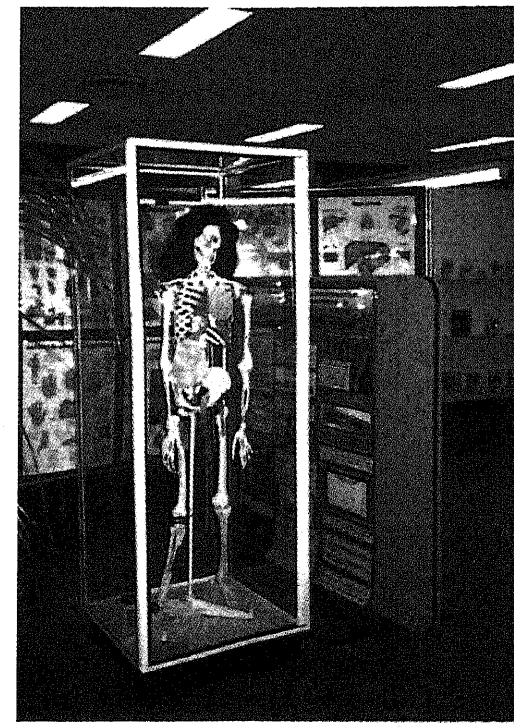

Fig. 1 – An exhibit originally prepared for the 'New Parts for Old' exhibition, which now attracts many high school student visitors studying a topic called 'Bionics' (Photo: Jenny Horder, courtesy of the Museum of Human Disease, UNSW).

school, Senior Science students cover bionics or artificial body replacement devices required when natural tissue or organs fail, while other groups opt for less specific programmes related to the human body. For high schools, integration of programmes with the curriculum has been of utmost importance. Currently over 5,500 students annually visit the museum and are guided by experienced presenters who communicate outcomes based awareness of disease and promote the pursuit of good health. These programmes have become an integral part of the University's outreach and a centrepiece for the Medical Faculty.

Many museums housing valuable artefacts are set up so that the materials on display are protected in lockable display cases and are out of reach of the visitors. Some pathology museums possess enough specimens to have one set on display for general visitors and another set specifically set aside for handling and close-up study by medical (and now science) students. This is not the case for the Museum of Human Disease. The one set of specimens displayed on open shelves is the one used for study by medical students and viewing by the general public. Public visitors are discouraged from handling the specimens for safety and other reasons, but volunteer staff will assist these visitors if they desire a closer look.

The success of the visitor programmes has been largely underpinned by the support of a committed group of museum volunteers. Currently, these number 23. They include University student volunteers as well as senior volunteers. They interact directly with visitors to maximize the effectiveness of the museum's programmes. Most of the original senior group have now been involved for six years and continue to harbour an abiding interest in health, medicine, the welfare of people and enthusiasm for building the success of the museum's programmes.

To develop general community audience acceptance and interest in these programmes, changes in the presentation of the museum and its associated areas were required. To soften the impact of disease, plants, appropriate artwork, labelled interpretable information and occasional fabric-panelled walls were installed. An additional temporary exhibition space called the 'Hall of Health' was established to house thematic exhibitions and displays of particular interest to the lay visitor audience. These include 'Deathstyles of the Rich and Famous', 'New Parts for Old', the 'Pox' exhibition and most recently 'Health Hazards in the Workplace', focusing on safety at work.

In Australian medical schools, there are usually only anatomy and pathology collections related to teaching, with little or no emphasis, in general, on medical history in those museums. Collections pertaining to the history of medicine or science are usually found in separate locations or their own specific museum with greater emphasis on artefacts or instruments rather than specimens. However, in an effort to enrich the pathology museum at UNSW, some activity in the direction of acquiring historical medical artefacts has occurred since 1996 and the correlation of medical instruments and treatment of disease has proved to be a positive step in stimulating interest overall.

Adjacent to the Museum, the tiered lecture theatre, a much appreciated introduction to the 'perception' of University life for many high school visitors, has been re-equipped to allow professional presentations using computer, video and data projector facilities. The Medical Discovery Lab is an interactive area offering microscope and computer facilities as well as displayed segments of previous thematic exhibitions, e.g. the so called 'Economy Class Syndrome' about the development of DVT's (Deep Venous Thrombosis) after long haul flights.

To deliver effective and appropriate public health education and awareness programmes, it has been necessary to improve the opportunity for visitors to interpret the museum content. Communication ability has been a major task for museum staff and volunteers, both through verbal presentations, worksheets and the preparation of thematic exhibitions geared to evoke interest and be informative for non-medical audiences. Photography,

Fig. 2 –Students from a Sydney High School complete their curriculum linked worksheet to maximize the benefit of their Museum visit (Photo: Jenny Horder, courtesy of the Museum of Human Disease, UNSW).

digitalisation and labelling of specimen images have been highly valuable exercises. Purchase of up to date films and videos add to the multimedia approach employed to maintain interest and improve interpretation. The translation and editing of the museum catalogues into a plain English version has been an arduous but continuing task to enrich the lay visitor experience.

This programme resembles a similar two-hour long programme developed and evaluated at the Hall of Health in Berkeley, California (Cartmill & Day 1997). The emphasis of their programme lays in the direction of reducing the uptake of harmful substances which are barriers to good health. Although the Berkeley museum setting is not a pathology museum, but a collection of interactive displays and volunteer run activities aimed at a younger audience (Year 5 – Year 8), the workshop structure and outline is similar to that adopted for public programmes at the Museum of Human Disease. The evaluated success of the Berkeley programme has been emulated at UNSW, but with broader content and audience scope aiming to prevent disease and promote health over a wide range of threats to well being. Educating community members on the investment required to keep their body healthy by demonstrating the effects of disease by means of access to these 'real' specimens, is seen as the way forward and an extra dimension to the greater use of an invaluable and irreplaceable collection.

To undertake this shift in emphasis from medical and science university level activities to public health programmes, has required sometimes 'knife edge' scheduling, dovetailing and compromise to implement successfully. Careful scheduling of the two-hour visitor programmes is required to balance the needs of medical

and science student users during the University semesters. It is part of the reason that booking is necessary for structured visitor programmes.

However, extending the user audiences in the museum has brought some rewards. A more business oriented and entrepreneurial approach has resulted in the addition of a service charge for the staff services required in community workshop programmes, upkeep of the specimens and professional use by external medical specialist training organizations. In addition, the public programmes have attracted sponsorship, donations and royalties.

Conclusion

The signs of success as a result of this evolution have been a transformation from an under utilized resource to a thriving and prosperous hub of activity attracting greater usage by all audiences both internal and external to the University. It has stimulated greater interest in knowledge and awareness about health matters and the ways to achieve this. Satisfaction with the programmes has continually been gauged by completion of evaluation forms, return visits and referrals by previous visitors, the increasing diversity of visitors and the broad geographic reach of visitors. Visitor groups come from all over NSW, some from interstate and even overseas locations. Income has allowed the upgrading and high quality maintenance of the museum setting. Its greater appeal has meant it being highly valued by the Medical Faculty for seminars and receptions. Annual visits are in the vicinity of 20,000 visits overall, including over 5,500 high school students.

The higher profile and reputation of the museum has expedited loans and interactions with other leading museums and companies. This has enriched the content of the museum for displays and special exhibitions.

It is to be hoped that this museum and others like it may continue to pursue the strategies and changes that enable them to be promoted more widely as the educational treasures they are. More medical knowledge and history being communicated widely to interested members of the public may be the saving catalyst for these priceless collections.

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